XXXI.—*Notice of an Australian* Diplommatina; *and Characters of new East Indian* Helicidæ *from Darjiling and Sincapore.* By W. H. Benson, Esq.

1. *Helix Cycloplax*, nobis, n. s.

Testa late umbilicata, orbiculato-depressa, supra confertim et undatim radiato-striata, striis spiralibus decussata, granulata, rufescenti-cornea, subtus leviori pallida, fascia mediana castanea circumdata; spira convexiuscula, apice planato, sutura obsoleta, demum impressa. Anfractibus 5 planatis, ultimo subcarinato (ætate juvenili acute carinato) antice dilatato, prope suturam antice tumidiusculo, subtus tumido. Apertura subquadrato-lunari, obliqua, intus interdum albido sublabiata, peristomate simplici, acuto, margine columellari non reflexo, cum basali angulum obtusatum formante. Umbilico profundo, perspectivo.

Diam. major 42, minor 34, axis 17 mill.

Hab. ad Darjiling, Himalayæ Sikkimensis montem. Teste R. Trotter.

I am indebted for this fine and interesting shell to Mr. Robert Trotter of the Bengal Civil Service, who collected it, with some other new shells, during a short visit to the Sanatarium of Darjiling, together with a single specimen of the scarce *Helix Orobia*, nobis, and some *Cyclostomata* previously described. Darjiling is situated at an altitude of more than 7000 feet above the sea level.

The shell is nearly related to *H. Oxytes*, nobis, an inhabitant of the mountain group south-east of the Burhampooter river, but it is at once distinguished from it by its sculpture, less acute periphery in the adult, the formation of the last whorl anteriorly, the more tumid base, &c. *H. Oxytes* will be found figured in Reeve's 'Conchologia Iconica' at plate 23 of *Helix*, species 734. In the same and two following plates, many of the *Helices* described in former Numbers of the 'Annals' are represented, besides some other Indian species. It should be remarked, however, that the figure of *H. crinigera* being magnified, and a greater vertical depth being assigned to the mouth than it actually exhibits in proportion, the shell is made to resemble too closely *H. Guerini*, another species from the same quarter, with which I compared it, but from which it is quite distinct. The other figures are very characteristic, particularly those of *H. Ampulla, Cysis, Thyreus, solata, Cestus*, and *radicicola*.

2. *Helix Tugurium*, nobis, n. s.

Testa perforata, depressa, tenui, supra exilissime radiatim costulato-striata, striis spiralibus decussatis, subtus lævigata, luteo-cornea, spira depresso-conoidea, apice acutiusculo. Anfractibus 6 planius-

culis, ultimo ad periphæriam subcarinato, subtus convexiusculo; apertura obliqua, late lunari, intus remote albido-sublabiata, peristomate simplici, acuto, margine columellari breviter subreflexo.
Diam. major 19, minor 16, axis 10 mill.
Hab. ad Darjiling. Teste R. Trotter.

The sculpture of this species is peculiarly delicate and beautiful. The labiation near the aperture forms exteriorly a yellow band similar to those observable in several other Himalayan *Helices*, and in the species *H. verticillus* and *Smyrnensis* of Southern Europe and Asia Minor.

3. *Helix Castra*, nobis, n. s.

Testa mediocriter umbilicata, depressissimo-conica, tenui, exiliter oblique acuto-striatula, cornea; spira ad apicem obtusa, suturis marginatis. Anfractibus $5\frac{1}{2}$ planulatis, ultimo ad periphæriam acutissime carinato, subtus planiusculo; apertura oblique subquadrata, margine acuto.
Diam. major 12, minor $10\frac{1}{2}$, axis 4 mill.
Hab. ad Darjiling. Teste R. Trotter.

This shell, approaching in form to *H. Cyathus*, Pfr., figured in the 'Conchologia Iconica' at no. 139, bears much resemblance to the Javanese species *H. Zollingeri* of the same author, represented in 'Conchologia Iconica' at no. 605, but differs in sculpture, marginate suture, less obtuse spire, and colour.

4. *Helix Lychnia*, nobis, n. s.

Testa imperforata, valde depresso-conica, tenui, translucente, polita, fusca; spira conica, obtusiuscula, suturis marginatis. Anfractibus $6\frac{1}{2}$ angustis, planiusculis, ultimo vix latiori, ad periphæriam acute compresso-carinato, subtus convexiusculo, medio excavato; apertura vix obliqua, angusta, securiformi, peristomate simplici acuto, margine inferiori arcuato, versus periomphalum leviter incrassato.
Diam. major vix 12, minor 11, axis $5\frac{1}{2}$ mill.
Hab. in Insula Sincapore. Teste Dr. J. F. Bacon.

This pretty species, remarkable among the depressed conic forms for its imperforate base and closely wound spire, was found by Dr. J. F. Bacon at Sincapore, where it does not appear to be scarce. A small specimen of *H. Janus*, Chemnitz, accompanied *H. Lychnia* from the same locality, to which it had not previously been assigned, the recorded habitat being Mount Ophir, near Malacca.

5. *Helix lubrica*, nobis, n. s.

Testa perforata, depressa, obsolete radiato-striata, politissima, luteo-fulvescente vel olivacea; spira planiuscula, apice vix prominulo,

obtuso, sutura leviter subcanaliculata. Anfractibus 5, ultimo rotundato, basi convexo; apertura late lunari, vix obliqua, peristomate acuto, intus interdum subremote albido-labiato, margine columellari oblique descendente, subsinuato, leviter incrassato, superne reflexiusculo.

Diam. major 24, minor 20, axis 11 mill.

Hab. ad Darjiling.

Distinguished by the proportion of the whorls and other characters from *H. resplendens,* Philippi, and from *H. vitrinoides* also by the greater depth of the last whorl, and the characters of the mouth. I have long possessed the pale-coloured variety from Darjiling; the acquisition of a second dark-coloured specimen from Mr. Trotter has confirmed the distinctness of the species.

Pfeiffer has ascribed his handsome reversed species, *Helix Bajadera,* to Bengal, on the authority of Cuming's collection. I have always held this habitat as more than doubtful; no specimen having ever been detected in any quarter of the Bengal Presidency by myself or my fellow-labourers in this field. I am now enabled to announce the true habitat as Bombay, a small, but characteristic specimen having just been transmitted to me by Mr. T. Jerdon from that locality. The habitat of *Helix vitellina,* Pfr., is recorded as unknown; a shell received from the same indefatigable naturalist, from the base of the Nilgherries, belongs, without doubt, to that form.

6. *Clausilia Iös,* nobis, n. s.

Testa vix rimata, fusiformi, oblique costulato-striata, pallide cornea, spira gradatim attenuata, apice obtusiusculo; anfractibus 8–9, vix convexiusculis, ultimo ad basin rotundato, antice fortius remotiusque costulato; apertura pyriformi, lamellis subæqualibus, inferiori furcata; plicis palatalibus duabus, 1ma longissima, a sutura remotiori, 2^{nda} obliqua, brevi, a lunella, satis distincta, interdum vix divisa, subcolumellari immersa; peristomate continuo, superne soluto, undique breviter reflexo.

Long. 13, diam. 3 mill. Apert. long. 3, lat. 2 mill.

Hab. ad Darjiling. Teste R. Trotter.

This is the third species which has been discovered in the Northern Dependencies of the Bengal Presidency, and the second only from the Cis-Gangetic Territory. The others are *Cl. loxostoma,* nobis, described in 1836 from specimens obtained from the Khasya Hills to the south-east of the river Burhampooter, and *Cl. cylindrica,* Gray, discovered by Capt. Hutton at Simla, near the Sutlej in the Western Himalaya, and found subsequently by myself ranging through the mountain chains of Sirmore and Kemaon towards the river Gagra.

None of the species of this genus are to be met with in the Gangetic plain, nor have any yet been obtained to the south and

west of the Ganges, although the conditions under which several fine species thrive on the eastern side of the Bay of Bengal, and even across the equator in Java, are equally present in Southern India. Under these circumstances, it seems that the vast alluvial country which stretches from the mouth of the Indus, in an immense arc, to the Delta of the Ganges, has proved an impassable barrier to this genus, which delights in a moist mountain climate, whether in cold or warm latitudes.

It may not be irrelevant to notice in this place an interesting fact in the geographical distribution of the terrestrial Mollusca. In 1844 I established in this Journal the genus *Diplommatina* for two small shells with a peculiar animal from the Western Himalaya. Captain Hutton has a third sinistrorse species, with a tubercle in the aperture, from the same quarter. I know not if it be identical or not with *Diplommatina Huttoni* of Pfeiffer, also from India, described in the unpublished Proceedings of the Zoological Society for 1851. In July last I had the satisfaction of detecting a fourth species among the East Australian collections of Mr. Strange, by whom it had been considered to be a *Pupa*. It is also sinistrorse, and has all the characteristics of the genus, including the double peristome. I referred the genus to the *Carychiadæ*, with reference to the absence of an operculum, which neither Capt. Hutton, Dr. Bacon, nor myself had been able to detect in the living animal. Dr. J. E. Gray, in his *Cyclophoridæ* of the British Museum, has placed *Diplommatina* among the operculated land-snails, and describes the operculum, in specimens of *D. folliculus* from Capt. Boys' collection, as being thin and shelly, with few whorls and prominent lamellæ on their outer edges. Mr. Strange failed to observe any operculum in the species which he found on the promontory of Point Danger, where it occurred, like its Himalayan congeners, under damp decayed leaves. This is not to be wondered at when that accessory piece evaded the examinations which both Capt. Hutton and myself instituted on living specimens with the view of discovering its existence, assisted, in my own case, by glasses of moderate power.

Dr. Pfeiffer, in his amended conspectus, follows Gray in considering *Cyclostoma minus* of Sowerby, a Philippine shell, to be a *Diplommatina*; and in referring the genus to the *Cyclostomacea*. Neither Sowerby nor Pfeiffer appears to have seen the operculum of *D. minor*. Its larger size, although not so great as in Sowerby's magnified figure, would show the operculum plainly if present. Pfeiffer, in the 'Conchylien Cabinet,' noticed the anomalous character of this species. It wants, however, the double peristome of the typical species.

Malvern, September 16, 1852.